

Application No. 09/187,472

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and generating a second parameter which is indicative of a color or darkness of the fresh beans; comparing the first and second parameters during roasting of the fresh beans; and terminating the roasting of the fresh beans when the first and second parameters match.

REMARKS:

Claims 1-9, 11, 56-58, 62-69 and 71-81 are pending.

Attached for the convenience of the Examiner is a clean "Claims Appendix" of the current wording of all pending claims.

Also attached is the Declaration of Philip A. Torbet (the "Torbet Declaration"). It forms part of and it is requested that it be considered in connection with this Amendment.

From the rejection of all claims over Allington (No. 6,106,877), alone or in combination with other references, applicants realize that this application was apparently not accorded the priority of provisional application No. 60/065,083, filed November 11, 1997. Applicants expressly claimed the benefit of that provisional application in the declaration on file herein, a copy of which is attached hereto for the convenience of the Examiner.

Applicants also noted that the filing receipt (a copy of which is attached for the convenience of the Examiner) does not list the priority of the provisional application. In view thereof, applicants request a new, revised filing receipt that includes the priority of the provisional application.

All previously pending claims were rejected under Section 112. Claim 1 was objected to because the limitation "the major portion" in line 9 was considered to lack antecedent basis. Antecedent basis for this phrase is contained in line 7 of the claim ("... recirculating a relatively major portion"). Thus, the retraction of this rejection is requested.

Claims 1, 11, 56 and 78 were rejected for lack of clarity. The revisions proposed in the Office Action (paragraphs 6-11) have been incorporated. With respect to claims 1 and 78, the major and minor portions are now identified as "relatively major" and "relatively minor" portions, to provide clarity.

Claims 1, 9-11, 56, 62 and 77-78 were rejected because the use of the word “substantially” was considered indefinite. The word “substantially” is routinely used in U.S. claims. MPEP §2173.05(b) specifically acknowledges and approves the use of the word “substantially”. In view thereof, the retraction of this rejection is requested.

In paragraph 13 of the Office Action, inquiry is made with respect to claims 3, 64, 70 and 72 if the step of “adjusting” when roasting is to be discontinued means simply that the roasting temperature is reduced, or whether the temperature is somehow fluctuated in response to some parameter of the fresh product. Further, it was considered not clear how atmospheric pressure can be manipulated.

This terminology relates to the manner in which roasting is discontinued, and in particular adjusting the termination of the roasting as a function of either the roasting temperature or atmospheric pressure. For example, if the roasting temperature is relatively higher (e.g. with respect to a preceding roast), roasting would typically be terminated relatively earlier. This earlier termination is a function of the temperature. Similarly, the roasting may be terminated earlier or later, depending on fluctuations in the atmospheric pressure.

In view of the explanatory comments provided above and the foregoing amendments to the claims, which were made only for purposes of clarification unrelated to patentability concerns, applicants request that the Section 112 rejections be retracted.

Substantively, all previously pending claims were rejected for anticipation or obviousness over Allington, alone or in combination with secondary references, as is discussed in paragraphs 15, 17 and 20-26 on pages 4-11 of the Office Action.

Paragraph 19 of the Office Action states that claims 1-6, 10 and 78 were rejected for obviousness over Porzi in view of Tidland. However, the explanation of the rejection states that the claims are rejected over Allington. Applicants are therefore uncertain exactly how claims 1-6, 10 and 78 were rejected in paragraph 19. For the purposes of this Amendment, however, applicants assume that the intended rejection is over Allington in view of Tidland, and not over Porzi in view of Tidland.

Applicants also note that claims 70-72 were twice rejected for obviousness over Porzi. See paragraphs 18 and 27 of the Office Action. Applicants assume that the rejection of the claims in paragraph 18 is intended to be a rejection over Allington, and it will be addressed as such below.

The present application is entitled to the November 11, 1997 filing date of the above-discussed provisional application. The earliest filing date for the Allington patent (from a provisional application) is May 1, 1998. Accordingly, Allington is not a prior art reference against this application. The rejection of the claims set forth in paragraphs 15, 17 and 19-20 should therefore be withdrawn. This applies equally to the rejection of claims 70-72 in paragraph 18 of the Office Action if that rejection was intended to be over Allington.

In paragraphs 27-38 of the Office Action, claims 1-9, 11, 56-58, 62-69 and 71-79 were rejected over Porzi alone or in combination with one of two principal secondary references, the Tidland patent and the Hansen patent. Claims 80 and 81 are newly added independent claims that have not been previously examined.

The present invention is a method for roasting fresh (green) coffee beans at retail establishments, such as supermarkets, for subsequent sale to customers. It is a feature of the present invention that it permits supermarket operators to roast the anticipated daily requirement to assure that its customers get freshly roasted coffee every day. This, for example, may involve roasting beans in batches of six pounds (page 21, lines 7-9), although larger or lesser amounts may of course be roasted, depending on the anticipated daily demand for particular bean types.

Coffee beans have about 130 different chemical constituents, including but not limited to the constituents mentioned in paragraph 4 above, most of which are not found in ordinary food products. During roasting, heat is quickly and relatively evenly applied to the beans, thereby subjecting the beans to pyrolysis, which transforms some of the chemicals into others, releases pollutants, and further drives off other constituents of the beans (Torbet Declaration, paragraph 7).

Coffee roasting releases large amounts of pollutants such as smoke, white plume smoke, hydrocarbons and volatile organic compounds ("VOCs"), including SO₂, NO₂

and particulates as small as $\frac{1}{2}$ micron (page 2, lines 6-9 and page 23, lines 18-23). The amount of pollutants, excluding water driven off the beans during roasting, is approximately 36 grams per pound of coffee roasted (Torbet Declaration, paragraph 4). As is disclosed in the application, roasting machines capable of practicing the invention recited in the pending claims are frequently installed in supermarkets, where coffee beans are roasted daily, as is described, for example, on page 3, lines 9-20, page 11, lines 26-30, and page 14, lines 9-13.

Roasting machines that practice the present invention typically roast coffee beans daily to supply the anticipated daily demand for roasted coffee beans. Depending on the store, this presently requires roasting about 50 pounds, and it is anticipated that this may increase to as much as 100 pounds of coffee beans per day as the machines become increasingly known and accepted. Under such conditions and at an average roasting time for a six-pound batch of coffee beans of about 12 minutes, roasting will take between about one and one-half to three hours. Roasting is typically done once a day, for example in the morning. When roasting about 50 pounds of coffee beans over a one and one-half hour period, or 100 pounds over about a three-hour period, between approximately 1800 grams and 3600 grams of pollutants are generated and released into the interior of an average-size supermarket at the hourly rate of approximately 1200 grams, which would render the supermarket uninhabitable. Moreover, the released pollutants would contaminate the interior of the supermarket, including products for sale, with soot, particulates, oily deposits, and undesirable odors that would keep customers away and damage merchandise (Torbet Declaration, paragraph 5).

Applicants have noted that the rejection of most of the claims relies in part on a reference (Hansen) that discloses a device for cooking prefried potatoes. Hansen states that prefried potatoes are subjected to heat for no more than about three minutes to give them the "crisp and crunchy consistency of the potato pieces which is characteristic of french fried potatoes" (column 2, lines 5-6 of Hansen).

Cooking prefried (and frozen) potatoes to make them crisp and crunchy employs a process that has no relationship to coffee roasting. The prefried potato pieces are cooked for only a short time, sufficient to drive off water and make them crisp and crunchy. During this short-term heating process, chemical reactions are limited, primarily to the

coagulation of starch contained in the potatoes and the caramelizing of sugar therein (column 7, lines 61-65 of Hansen). Otherwise, the first minute of the cooking process is taken up by thawing the previously frozen potatoes and bringing their temperature to about 120° C to drive off water (column 7, lines 56-59), while during the third minute of cooking the final browning and drying of the potatoes takes place (column 8, lines 3-5 of Hansen). In sum and substance, therefore, the cooking of prefried french fries according to Hansen takes up little time, and generates primarily hot air containing some water and fat that is driven off the potatoes during cooking, and some smoke. Directing the exhaust from the fryer through a simple filter, as is disclosed in Hansen, sufficiently cleans the exhaust so that it can be discharged, provided at least some of the exhaust is recirculated through the filter.

Coffee roasting differs vastly from cooking prefried potatoes. Coffee beans have an entirely different consistency and structure than potatoes. Coffee beans must be subjected to heat for a much longer period than is necessary for cooking prefried potatoes, so that the coffee beans are chemically altered to give them the desired dark brown color, brittle structure, and aroma. In the process, large amounts of hydrocarbons are driven off, oils are released and partially burned, and chemical reactions occur, which do not occur when cooking prefried potatoes because potatoes lack almost all of the constituents found in coffee beans and/or because chemical reactions are not initiated during the relatively short time while prefried potatoes are cooked. The quantity of pollutants released during coffee roasting (on a per unit basis) is vastly greater than the amount of pollutants released during cooking prefried potatoes. Finally, commercial coffee roasting (in a supermarket, for example) involves the roasting of relatively large quantities of coffee, that is, usually at least about 50 pounds per day, and sometimes significantly more than that, which increases the volume of pollutants generated over a given time period far above anything encountered when cooking individual orders of prefried potatoes. Thus, the problems associated with removing pollutants from the exhaust of a coffee roaster and the exhaust from a prefried potato cooker differ qualitatively and quantitatively, which requires vastly different approaches for effectively removing the pollutants from the respective exhausts. As a consequence, the two processes become incomparable (Torbet Declaration, paragraph 8).

Thus, if the amount of pollutants generated by coffee roasting were released into the closed interior of an average supermarket, the air in the supermarket would become unbreathable before the first batch had been roasted (Torbet Declaration, paragraph 10). In fact, in the past this large amount of pollutants released during coffee roasting made it necessary to not only vent the exhaust to the exterior, but to employ expensive and energy-consuming afterburners or other anti-pollution devices to comply with atmospheric pollution regulations and restrictions (page 2, lines 9-14 of the present application, and Torbet Declaration, paragraph 11).

As a result of the foregoing, one of ordinary skill in the art of coffee roasting would not consult the art of cooking prefried potato pieces, such as the Hansen patent, for guidance concerning the removal of pollutants from exhaust gases generated during coffee roasting so that such gases can be directly vented into closed environments, such as, for example, the interior of supermarkets, because of the vastly greater amounts of and different types of pollutants that are generated during coffee roasting.

The method of the present invention eliminates the need for venting the coffee roaster to the exterior and employing afterburners or other anti-pollution devices to cleanse the exhaust gases before they are released. According to the present invention, the exhaust gases from coffee roasting can be discharged directly into a closed environment, for example rooms frequented by humans, such as supermarkets, where the method of the present invention is commonly practiced.

One aspect of the present invention involves cleaning the hot exhaust withdrawn from the roasting chamber so that it is substantially clean, that is, sufficiently clean for discharging all of the air circulated through the roasting chamber, or a portion thereof, directly into the surrounding room. The need for recirculating a portion of the filtered air back through the filter to "further purify the air" before it is released, as is required by the Hansen patent (column 4, lines 44-45), is eliminated.

Another feature of the present invention is that the progress of the coffee roasting is monitored in real time so that undesired deviations in the development of the beans being roasted can be adjusted in real time to precisely replicate the preestablished roasting

process and aroma profile of the beans, as is discussed on pages 5 and 6 of the present invention. As a result, corrective action can be taken instantly without having to await the completion of the roast and a subsequent aroma test to determine whether or not the desired taste and aroma profile of the beans have been attained.

The primary reference, Porzi, is concerned with providing a monitor for coffee roasters that is not subject to thermally induced errors (column 2, line 32) by installing the necessary sensors in a cooled housing that is attached to the roaster. With respect to actual coffee roasting, the disclosure of Porzi is limited to the observation that the oven will be shut off "the moment that the color of the roasting commodity matches the sample color" (column 1, lines 37-38). Porzi further discloses that the output of the colorimeter reflects "either a prescribed roast characteristic of the end product, or the amount of heat to be applied during the roast step" (column 2, lines 44-47). Finally, Porzi notes that the roaster has a display for monitoring "the effective color of the commodity 8 continuously as the roast progresses" (column 4, lines 20-21). Beyond that, the disclosure of Porzi is limited to constructional details of the manner in which the photodetector and photoemitter are mounted in the cooled housing attached to the roaster.

The Hansen patent discloses a device for "cooking prefried low fat potato pieces" (column 2, line 2) by placing the pieces in a cooking chamber that is heated by quartz lamps. The cooking chamber communicates via heat exchanger tubes 5 with a filter housing (11). A blower (7) induces an air flow from an intake (6) into the cooking chamber via tubes (5) into the filter housing where some of the pollutants generated in the cooking chamber are removed. The filtered air flows through conduit (8) from where it is partially discharged via outlet (9) to the exterior while another portion of the filtered air is recirculated into the filter housing through ports (24). The purpose of the filter is to purify the air, but it is not capable of doing so. Thus, Hansen requires:

"To further purify the air there is provided in the wall of air in-let chamber 21, opposite to air out-let canal 8 and 9, a number of intake openings 24. As a result of the low pressure in air in-let chamber 21, part of the air out-let canal 8 will be drawn in once

more through inlet ports 24 and be subject to yet another cleaning by re-circulation through the filter device.” (Column 4, lines 44-51)

The portion of the air in outlet canal 8 not drawn through inlet ports 24 is not subject to such further cleaning by recirculating it through the filter. This portion of the air exits to the exterior through outlet 9 and will continue to carry pollutants.

All claims are now expressly limited to methods of roasting coffee beans to clearly delineate the claims from cooking other food products, including particularly the cooking of french fried potatoes. This eliminates Hansen as an effective reference because Hansen is directed to nonanalogous art.

Turning to the rejection of the claims, independent claim 71 was rejected for obviousness over Porzi alone. Claim 71 is for a method of roasting coffee beans involving the steps of generating two parameters, a first one that reflects the desired color or degree of darkness of the beans to yield the intended aroma, and a second parameter that reflects the development of the first parameter during roasting. As summarized above and stated in the application, the development of the first parameter relates to how the desired ultimate color (or degree of darkness) is attained, not when it is attained. In this regard, the paragraph bridging pages 5 and 6 of the application states in relevant parts:

“A very important advantage of the present invention is that it permits one to replicate roasting results by using the darkness (or color) development time line for the beans being roasted

This is central to maintaining the consistency of the roasts and is not just a function of the final darkness (or color) of the beans.

How that darkness is attained also determines the final profile of the roasted product, e.g. the roasted beans, because the same darkness (or color) can be attained over a wide range of roasting times, which in turn depends on other parameters such as, for example, the roasting temperature. The profile of the roasted beans will vary greatly based on how the ultimate color was

attained. Thus, the key to consistency in the profile is to roast the beans in the same way, time after time. This is accomplished ... [by] maintaining the preestablished darkness (or color) development time line and parameters. In the past this was impractical, if not impossible, because there was no real-time color monitoring of the beans being roasted inside the roasting drum.”

Claim 71 recites “in real time adjusting the roasting step when the second parameter indicates that a deviation from the predetermined *development* of the first parameter occurred to thereby reestablish the predetermined *development* of the second parameter”.

Porzi contains no suggestion of measuring the *development* (as the term is used in this application) of the bean color or other roasting parameter that is monitored. It simply states that the oven is shut off when the sensed bean color matches the color preset in the colorimeter (column 1, lines 39-40).

Since Porzi has no relevant disclosure whatsoever relative to the step of adjusting the roasting step in real time to correct deviations in the *development* of the first parameter as recited in claim 71, the claim is not obvious over Porzi.

Independent claim 1, and claims 2, 3 and 10 depending therefrom, as well as claim 78 (which depends from claim 31), were rejected for obviousness over Porzi in view of Tidland. Tidland was again characterized as “discharging a portion of the filtered air to the surrounding room during roasting” and that it eliminates the need for external venting, with which applicants strongly disagree. Applicants initially note that independent claim 1 is not for “eliminating the need for external venting”. Claim 1 requires that polluted, hot air generated during roasting be filtered to remove substantially all pollutants and “discharging a relatively minor portion of the filtered air while reheating and recirculating the relatively major portion of the air for further use during roasting”.

In rejecting the claims over Tidland as a secondary reference, Tidland has been mischaracterized. For example, in paragraph 39 of the Office Action, column 5, lines 42-53 of Tidland are said to “disclose that **during roasting**, some of the excess air in the roasting

system escapes through the filters to the outside environment and the remainder of the heated air is drawn into the air reconditioning system where it is recycled back into the roasting chamber". This is incorrect. In fact, this portion of Tidland states:

"The hot air and smoke are drawn by the fan 30 through cyclone pipe 61 into exhaust section 16. As the hot air expands, some of the excess air in the roasting system 12 escapes through the filters 17 and 18 to the outside environment. The remainder of the heated air is drawn by fan 30 down through the open dampers 20 into air reconditioning system 43. The air is drawn through the filters 72-78 that are referred to generally as filtering system 56 and past the heating elements 54. The filtering system 56 removes the smoke and other pollutants from the hot air and the heating elements 54 reheat the air. The fan 30 then blows the filtered and reheated air back into the roasting chamber 36."

Tidland nowhere states or suggests that excess air escapes through the filters during **roasting**. Tidland only states that "excess air in the roasting system" escapes. What is excess air?

The very same sentence that states that excess air escapes through the filters also states that this occurs "[a]s the hot air expands" (column 5, lines 43-44). The excess air is the air that expands, and the air only expands while its temperature increases to the desired roasting temperature. Once the roasting temperature has been reached, the air in the system does not further expand. Thus, during roasting no additional air will vent because no additional air that could be vented is present. Tidland states that when roasting is complete the "damper 24 is opened ... allowing the fan 41 to blow cooler ambient air into roasting chamber 36" (column 7, lines 26-28). During roasting, ambient air "damper 24 is closed" (column 5, line 22). Since the ambient air cannot enter the roaster during roasting, there is no excess air that could be vented during roasting. The damper is only opened after roasting is complete.

As the foregoing demonstrates, the "excess air" that is vented through filters 17-18 is air from the expansion of the air as it is being heated at the beginning of the roast. The venting of excess air does not continue while roasting is in progress.

Thus, the Tidland patent teaches to one of ordinary skill in the art, and indeed any laymen, to roast coffee in a closed system, permitting only an initial venting of "excess air" as the system is heated to the roasting temperature. During roasting, the air remains in the system and is cleaned, reheated and recirculated until the beans are fully roasted.

In addition, it is noted that Tidland specifically discloses that at the end of the roasting process the "hot recirculated air" (column 7, line 24), and not pollution-free, room temperature air as recited in claim 1, is vented.

It is well known, and does not require the quotation of supporting authorities, that what a prior art reference teaches one of ordinary skill in the art requires a reading and understanding of the entire reference. Picking selected statements from a prior art reference, and disregarding other statements, as was done in connection with the rejection of the claims over Porzi and Tidland, is an impermissible hindsight reconstruction of a prior reference based on what is disclosed in the present application, and not what the prior art references teach one of ordinary skill in the art.

Thus, Porzi and Tidland, taken alone or in combination, do not render independent claim 1 obvious.

Independent claims 11 and 62 were rejected for obviousness over Porzi in view of Hansen. Hansen was viewed as teaching what is missing from Porzi, namely cleaning and cooling the roasting air, followed by discharging the clean, cool air to a room.

Claim 11 is limited to roasting coffee beans in commercial quantities, i.e. in batches of one pound or more by flowing heated air over the fresh beans, thereafter cleaning the air so that it is substantially pollutant-free, cooling the air, and discharging the cooled, pollutant-free air "into a substantially closed room frequented by humans".

Hansen discloses a device for cooking prefried potato pieces in small, individual portions for serving them "freshly heated and crispy" (column 1, lines 21-22). The cooking

device is intermittently used whenever a customer orders a serving of french fries, while during the intervening times it is on standby and kept at a lower temperature (column 7, lines 18-21).

The cooking of prefried french fried potatoes takes about three minutes (column 7, line 54), so that the french fries have a slightly brownish color caused by the caramelized sugar content thereof (column 7, lines 63-65). This generates some smoke, pollutant and water steam as is commonly encountered, for example, in fast food restaurants serving french fries. The amount of pollutants is negligible relative to the amount of pollutants generated in coffee bean roasting, as was discussed above and is summarized in the Torbet Declaration, paragraph 8. One of ordinary skill in the art faced with the task of internally (that is, within the machine) removing all pollutants generated during roasting a batch (of one pound or more, for example) of fresh coffee beans would not consult Hansen because he knows that french frying does not generate the type and quantity of pollutants generated and released during coffee roasting (Torbet Declaration, paragraph 9). Thus, Hansen is nonanalogous art relative to the removal of pollutants from roasting commercial (retail) batches of coffee beans.

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This conclusion is reinforced by the fact that Hansen permits a relatively large proportion of pollutants generated during cooking prefried potatoes to escape to the atmosphere, as was demonstrated above. This is acceptable for Hansen because the cooking of prefried potatoes releases pollutants at a much lower rate than coffee roasting, for much shorter periods of time, and only intermittently as compared to coffee roasting.

Accordingly, Porzi and Hansen are an inappropriate combination of references for determining that the present invention is obvious. Such a combination can only be made on the basis of the teachings of the present invention, which would amount to an impermissible hindsight reconstruction of the prior art. One of ordinary skill in the art would not combine Porzi with Hansen. For this reason alone, claim 11 is not obvious over Porzi in view of Hansen.

In addition, claim 11 requires that exhaust air be cleaned so that it is substantially pollutant-free and can be discharged into a substantially closed room frequented by humans. Hansen does not clean the exhaust so that it is substantially clean as was discussed above. This is acceptable because Hansen only intermittently cooks prefried potatoes for about

three minutes, which generates many fewer pollutants than coffee roasting. If the same took place during coffee roasting, that is, if the exhaust air were only partially cleaned, and the level of released pollutants were merely lowered by recirculating a part of the exhaust through the filter while discharging the remainder of the exhaust without further cleaning into a substantially closed room, the room would quickly become uninhabitable.

The same comments apply to independent claim 62, and it is allowable for the same reasons.

In addition, claim 62 is further distinguishable from Porzi and Hansen because it recites that at least a portion of the cooled air is exhausted "directly into a room of a building without recirculating any part of the cooled air into the filtration system". Hansen discloses that part of the exhaust air is recirculated into the filtration system. Thus, even if Hansen were analogous art, which it is not, claim 62 is opposite to Hansen in that it specifically requires the discharge of the exhaust without any recirculation through the filtration system.

Accordingly, Porzi and Hansen, even if Hansen were a reference that could appropriately be combined with Porzi, which it is not, do not suggest the above-discussed limitation of independent claims 11 and 62. Accordingly, claims 11 and 62 are not obvious over Porzi, alone or in combination with Hansen.

New independent claims 80 and 81 are similar to independent claims 11 and 62. They differ in regard to the latter because they are directed to a method of roasting coffee beans "in a supermarket located inside a building" and include the step of "exhausting the cooled air into the supermarket" (claim 80) or "discharging the cooled, pollutant-free, room temperature air into the supermarket" (claim 81). For the reasons discussed above, in particular in conjunction with the rejection of claims 11 and 62, roasting six-pound batches of fresh coffee beans, which may take about 12 minutes (page 21, line 9 of the present application), generates an amount and a variety of pollutants that differ in kind and quantity from the pollutants generated when cooking prefried potato pieces for about three minutes. A french fry cooker can be placed inside a room even though the device of Hansen is incapable of removing all pollutants. Even with the low level of pollutants generated during cooking french fries, part of the exhaust must be diverted back into the filter. Claims 80 and 81 cover a

coffee bean roasting method that permits direct discharge of the exhaust from the roaster into the interior of a supermarket. Even if Hansen is considered analogous art, which applicants maintain it is not, it contains no suggestion how to construct a french fry cooker that does not require recirculating part of the already filtered air to reduce the discharge of pollutants. With the much greater volume of pollutants generated during coffee roasting, which heretofore typically required afterburners to limit the discharge of pollutants into the atmosphere, it would be utterly impossible to practice the method of Hansen in the coffee roaster of Porzi.

Accordingly, new claims 80 and 81 are also not obvious over the prior art.

Independent claim 79 was rejected for obviousness over Porzi in view of Grubbs. The claim is directed to a coffee roasting method that includes positioning a spectrometer at a location spaced apart from the window of the roaster and "activating the laser and directing laser light from the laser through an unobstructed air gap between the laser and the window onto the beans being roasted". Fig. 5B of the present application, together with the corresponding description on page 17, illustrates laser (108) mounted on a holder (108a) that directs laser beam (109) via an unobstructed air gap between the laser and the window (98) onto the beans in the roaster. Porzi does not disclose the use of a laser. Further, it mounts the photoemitter in the earlier discussed cooled housing that is attached directly to the roaster. There is no unobstructed air gap between the laser (or the photoemitter) and the window or any other part of the roaster.

Grubbs discloses a method for preparing flaked coffee and has nothing to do with roasting coffee. It is therefore directed to nonanalogous art and is not properly combinable with Porzi. For this reason alone, Porzi in combination with Grubbs do not render claim 79 obvious.

More importantly, Grubbs contains no disclosure whatsoever concerning the manner in which the laser is mounted. Grubbs merely notes that a particular laser is used to direct light onto the flake surface that is to be scanned. The laser "is mounted vertically on the lid in an abutting relationship" (column 7, lines 42-50). Like Grubbs, Porzi discloses to mount the cooled housing with the light emitter and photodetector directly onto the wall (hatch) of the

roaster. There is no unobstructed air gap between the light emitter and the window, or wall of the roaster, in either Porzi or Grubbs.

Thus, Porzi and Grubbs do not render claim 79 obvious.

Finally, independent claim 56 was rejected for obviousness over Porzi, Hansen, Grubbs and Scher. Porzi, Grubbs and Hansen were considered to teach "the above-mentioned concept" except for controlling multiple roasting machines at different locations, which was considered taught by Scher.

Claim 56 is directed to a coffee roasting method including "cooling at least a portion of the used air and recirculating any remaining portion of the cooled air to the hot air supply; [and] discharging the at least a portion of the used air in its entirety into the enclosed room while continuing heating the fresh beans". Porzi, Grubbs and Scher contain no disclosure whatsoever concerning the discharge of polluted air generated during coffee roasting. Hansen discloses a device for cooking prefried french fries that, for reasons discussed above, is nonanalogous art. For this reason alone, claim 56 is not obvious.

Even if Hansen were combined with the other references, which applicants maintain is improper, Hansen fails to suggest the above-quoted portion of claim 56. As discussed above, Hansen diverts part of the exhaust from the filter back into the filter "to further purify the air" and subjects it "to yet another cleaning by re-circulation through the filter device" (column 4, lines 44-51). Claim 56 specifically recites that the portion of the used air that is discharged is discharged "in its entirety into the enclosed room while continuing heating the fresh beans".

Thus, independent claim 56 is not obvious over Porzi in view of Hansen, Grubbs and Scher.

The remaining claims 2-9, 57, 58, 63-69 and 71-78 all depend from the above-discussed, allowable parent claims. Many of the dependent claims are directed to independently patentable features of the invention. They are further allowable because they depend from allowable parent claims.

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Finally, applicants note the provisional double patenting rejection of the claims over copending application No. 09/591,994 in view of several of the above-discussed secondary references "in combination with Allington et al." since the claims of the copending application appear to be duplicates of claims in the Allington patent. Applicants do not understand why this would require a terminal disclaimer in this application. Thus, if a terminal disclaimer is in fact necessary, the assignee of the present application intends to address it in connection with the prosecution of the copending application.

In view of the foregoing, applicants submit that all pending claims are in condition for allowance. A formal notification to that effect at an early date is requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 415-576-0200.

Respectfully submitted,



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